

**PROPOSED REGULATION OF THE  
STATE ENVIRONMENTAL COMMISSION**

**LCB File No. R126-05**

September 16, 2005

EXPLANATION – Matter in *italics* is new; matter in brackets [~~omitted material~~] is material to be omitted.

AUTHORITY: §§1-4, 8, 25, 28 and 59, NRS 445A.855; §§5-7, 9-16, 18-21 and 40-58, NRS 445A.860; §17, NRS 445A.860 and 445A.880; §§22, 24, 26, 29, 30 and 32-39, NRS 445A.855 and 445A.860; §23, NRS 445A.855, 445A.860 and 445A.863; §§27 and 31, NRS 445A.855 and 445A.863.

A REGULATION relating to public water systems; transferring regulatory authority for drinking water standards and community and public water systems to the State Environmental Commission; providing for a sanitary survey on all public water systems at specified times; providing for the reporting of any significant deficiency in a sanitary survey; providing that community public water systems shall deliver consumer confidence reports to their customers on an annual basis; providing that the State Environmental Commission may grant variances under certain circumstances; establishing certain prerequisites to the commencement of a water project to treat groundwater; providing for the submission of a preliminary engineering report before a public water system may construct a new facility or make additions to or modify an existing facility; providing that the design of a groundwater treatment facility must be based upon a pilot plant study under certain circumstances; specifying the contents of an application for approval of a groundwater treatment or blending facility; providing that an engineer must prepare all plans, specifications and design reports for a facility to treat groundwater; specifying certain standards for the design of a facility to treat groundwater; providing that an approval of a water project is effective for 1 year and may be extended or revoked under certain circumstances; providing the standards for disinfection for a facility to treat groundwater; requiring the inclusion of certain features in the design and construction of a facility to treat groundwater; requiring operating certificates for persons who operate facilities to treat groundwater; requiring certain equipment to be kept at a facility for the disinfection of groundwater; providing that a facility to treat groundwater must submit a plan of operations for each facility that treats groundwater; requiring a facility that treats groundwater to maintain certain records; providing that a public water system must submit sampling reports on a regular basis to the Division of Environmental Protection of the State Department of Conservation and Natural Resources or the appropriate district board of health; providing for the adoption by reference of certain provisions of the National Primary Drinking Water Regulations; specifying the methods to be used in conducting an analysis to determine compliance with the primary standards; providing that certain

water systems must determine compliance with maximum contaminant levels for certain elements during normal operating conditions by a running annual average at any sampling point; setting forth the secondary maximum contaminant levels; specifying the monitoring frequency for secondary maximum contaminant levels and reporting thereof; specifying the method for conducting an analysis to determine compliance with secondary maximum contaminant levels; providing that certain analyses must be performed by a laboratory certified pursuant to NAC 445A.542 to 445A.54296, inclusive; providing for public notice of violations of primary drinking water regulations and other situations with potential adverse health effects; providing that the State Environmental Commission may grant a variance from a primary or secondary drinking water regulation under certain circumstances for certain lengths of time; revising the factors under which the State Environmental Commission may grant an exemption from a requirement respecting a maximum contaminant level or treatment technique of a primary drinking water regulation; revising the requirements that a public water system must establish in order to be granted an exemption by the State Environmental Commission; and providing other matters properly relating thereto.

**Section 1.** Chapter 445A of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 22, inclusive, of this regulation.

**Sec. 2. 1.** *The Division or the appropriate district board of health shall conduct a sanitary survey on all public water systems.*

*2. All public water systems using surface water or groundwater under the direct influence of surface water will be subject to a sanitary survey at a minimum of once every 3 years or on a more frequent basis as determined by the Division.*

*3. All public water systems using solely groundwater will be subject to a sanitary survey at a minimum of once every 5 years or on a more frequent basis as determined by the Division.*

**Sec. 3. 1.** *Any significant deficiency noted in a sanitary survey must be addressed in writing to the Division or to the appropriate district board of health and must include a proposed implementation plan and schedule for correction of the deficiency within 45 days from the receipt of the sanitary survey report by the public water system.*

*2. As used in this section, “significant deficiency” means any deficiency found at a public water system during a sanitary survey that is a violation of any provision of NAC 445A.450 to 445A.6731, inclusive, and sections 2 to 22, inclusive, of this regulation, which may have the potential to cause a risk to public health. A significant deficiency includes, without limitation, unsanitary source conditions, treatment plant deficiencies, inadequate disinfectant contact time, cross connections, endangerment of sources, unsanitary storage and distribution of water, inadequate pressure, inadequate staff and any other deficiency of comparable significance.*

*Sec. 4. Each community public water system shall deliver to its customers on an annual basis consumer confidence reports which contain information on the quality of the water delivered by the system in accordance with the requirements of 40 C.F.R. §§ 141.151 to 141.155, inclusive, as adopted by reference in NAC 445A.4525.*

*Sec. 5. 1. The Commission may grant a variance, subject to the provisions of subsection 2, for compliance with a requirement specifying a maximum contaminant level or treatment technique to:*

*(a) Public water systems serving 3,300 or fewer persons; or*

*(b) With approval from the Federal Government, public water systems serving more than 3,300 persons but fewer than 10,000 persons,*

*↪ if the variance meets the requirements of this section.*

*2. A variance is available under subsection 1 if:*

*(a) The Federal Government has identified a variance technology under 42 U.S.C. 300g-1(b)(15) of the Federal Act that is applicable to the size and quality conditions of the source water of the public water system;*

*(b) The public water system installs, operates and maintains, in accordance with guidance or regulations issued by the Federal Government, such treatment technology, treatment technique or other means; and*

*(c) The Division determines the conditions of subsection 3 are met.*

*3. A variance under this section is only available to a public water system that cannot afford, in accordance with affordability criteria, to comply with a national drinking water regulation, including compliance through:*

*(a) Treatment;*

*(b) Alternative source water supply; or*

*(c) Restructuring or consolidation, unless the Division makes a determination that restructuring or consolidation is not practicable.*

*4. The Commission must determine that the terms of the variance ensure adequate protection of human health, considering the quality of the source water for the public water system and the removal efficiencies and expected useful life of the treatment technology required by the variance.*

*5. As used in this section, “affordability criteria” includes the public water system being in an area in which the average income per household is less than 80 percent of the median household income of the county in which the system is located, and the public water system has water rates equal to or exceeding 1.5 percent of water system median household income upon implementation of a project to achieve compliance with the regulation from which a variance is sought. For the purposes of this subsection:*

*(a) The median household income of the county in which the system is located must be taken from the latest data available from the Bureau of the Census of the United States Department of Commerce.*

*(b) The water system median household income must be taken from the latest data available from the Bureau of the Census for the subject tract, unless a site specific survey is conducted using methodologies approved by the Division or the appropriate district board of health.*

**Sec. 6. 1.** *A person who, because of unique circumstances, is unduly burdened by a regulation of the Commission and thereby suffers a hardship and the abridgment of a substantial property right may apply for a variance from the regulation.*

*2. An application for such a variance must be made to the Commission.*

**Sec. 7. 1.** *A person seeking a variance from the provisions of NAC 445A.450 to 445A.492, inclusive, and sections 2 to 7, inclusive, of this regulation must:*

*(a) Submit an application for the variance to the Secretary of the Commission; and*

*(b) Submit a payment of \$150 to cover the costs of:*

*(1) Publication of notice of the application and notice of the date of the public hearing;*

*(2) A review and analysis of the application conducted by a member of the staff; and*

*(3) Printing and clerical services required to prepare the requested variance for submission to the Commission.*

*2. The Commission may waive the requirement that the applicant pay the costs set forth in subsection 1 upon a showing of extreme economic hardship.*

**Sec. 8.** *The provisions of sections 8 to 22, inclusive, of this regulation apply to any public water system that uses a source of groundwater that must be treated to remove or blend a*

*constituent that exceeds primary drinking water maximum contaminant levels as adopted by reference in NAC 445A.4525 or the secondary drinking water maximum contaminant levels specified in NAC 445A.455.*

**Sec. 9.** *A public water system which relies on a source of groundwater must, before commencing a water project to treat or blend groundwater:*

- 1. Submit to the Division or to the appropriate district board of health, pursuant to section 10 of this regulation, a preliminary engineering report for review and preliminary approval;*
- 2. Upon preliminary approval of the preliminary engineering report, submit to the Division or to the appropriate district board of health, with the appropriate fees, an application for approval of the water project to treat groundwater that complies with the requirements of section 12 of this regulation;*
- 3. Obtain written approval from the Division or the appropriate district board of health for the water project to treat groundwater; and*
- 4. Submit to the Division or the appropriate district board of health a copy of a manual of operations and maintenance for the facility to treat groundwater.*

**Sec. 10.** *1. Except as otherwise provided in NRS 445A.920, a public water system proposing to:*

- (a) Construct a new facility for treatment or blending of groundwater; or*
  - (b) Make additions to or modify an existing facility to treat or blend groundwater,*  
*↪ must submit a preliminary engineering report to the Division or to the appropriate district board of health. The report must be reviewed by the Division or the appropriate district board of health before the supplier begins design of a facility to treat or blend groundwater.*
- 2. A preliminary engineering report must:*

*(a) Describe the needs of the public water system, identify the purpose of the water project, analyze alternatives and propose a preferred course of action, from an engineering and economic perspective;*

*(b) Identify design alternatives that were considered and associated design parameters; and*

*(c) Identify a recommendation by an engineer for the final design.*

**Sec. 11.** *1. Except as otherwise provided in subsection 2, the design of a groundwater treatment facility must be based upon a pilot plant study. The pilot plant study must identify:*

*(a) Hydraulic characteristics such as the optimum process loading rate or the proper blending rates; and*

*(b) The unit process performance such as the optimum chemical feed and the most effective chemicals to use for adequate removal.*

*2. If the treatment technology recommended in the preliminary engineering report required pursuant to section 9 or 10 of this regulation has been tested on water with similar characteristics, the treatment technology may be approved without a pilot study.*

*Documentation must be provided to verify that the treatment technology has been proven to treat the drinking water to the minimum requirements set forth in NAC 445A.453.*

**Sec. 12.** *An application for approval of a groundwater treatment or blending facility must contain:*

*1. Complete plans for the treatment or blending facility, including, without limitation, the details of any improvements to be made and all work to be performed on site.*

*2. Complete specifications to supplement the plans for the facility.*

*3. A design report that:*

*(a) Describes the basis for the selection and design of the water project;*

*(b) Provides the criteria for design, data and other pertinent information defining the water project; and*

*(c) Establishes the adequacy of the proposed water project to meet the needs of the public water system.*

*4. Verification of the requirements for fire flow and fire demand.*

*5. Any other pertinent information required by the Division or the appropriate district board of health for review and approval of the water project application.*

**Sec. 13.** *All initial and final plans, specifications and design reports for a facility to treat groundwater must be prepared by, or under the direct supervision of, an engineer. The engineer shall affix his signature, the applicable date and his wet seal or stamp to each sheet of those plans and to each title page for those specifications and design reports in accordance with NAC 625.610, 625.611 and 625.612.*

**Sec. 14. 1.** *The design for a new facility to treat groundwater must:*

*(a) Be free of structural and sanitary hazards.*

*(b) Provide for protection against pollution and contamination by backflow.*

*(c) Provide equipment for measuring and recording flow.*

*(d) Be designed to mitigate the effects of events such as earthquakes, fires, floods, freezing and sabotage that are reasonably foreseeable.*

*(e) Provide access for inspection, maintenance and monitoring of all unit processes.*

*(f) Provide, if required by the selected treatment process, for a coagulation process that includes rapid chemical mixing and is based on pilot plant or laboratory scale or equivalent results that demonstrate the effectiveness of the coagulant chemicals over the full range of water quality conditions expected.*



*(g) Provide, if filtration is required:*

*(1) For filter-to-waste for each filter unit;*

*(2) Backwash rates and facilities for surface or subsurface wash using air, water or a combination of these to clean the filter; and*

*(3) Treatment for the removal of solids from filter backwash water if the water is recycled into the treatment process. Recycled backwash water must be returned to the headworks of the treatment plant.*

*(h) Provide equipment for disinfection which is of proper size for the full range of expected conditions of flow and which is capable of automatic feeding accurately at all rates of flow.*

*(i) Provide for operation of the treatment plant without frequent shutdowns and start-ups.*

*2. As used in this section, “filter-to-waste” means a provision in the filtration process to allow the water that was filtered first to be wasted or reclaimed.*

**Sec. 15. 1.** *The Division or the appropriate district board of health shall not approve a project for a facility to treat groundwater unless the application for approval of the water project demonstrates that the water project will comply with the applicable provisions of sections 8 to 22, inclusive, of this regulation.*

*2. Approval of a water project is effective for 1 year, except that the Division or the appropriate district board of health may extend this period in 1 year increments if:*

*(a) Work is being performed on the water project; and*

*(b) The Division or the appropriate district board of health receives a schedule of work and periodic updates on the progress of the water project.*

*3. The Division or the appropriate district board of health shall revoke its approval of a water project if work on the water project:*

*(a) Does not commence within 1 year after the approval of the water project becomes effective; or*

*(b) Ceases for a continuous period of 1 year.*

**Sec. 16.** *Each public water system to which the disinfection requirements of NAC 445A.66825 applies shall provide disinfection treatment in accordance with the provisions of NAC 445A.66825 to 445A.6685, inclusive, and 40 C.F.R. §§ 141.131, 141.132, 141.133 and 141.135, as adopted by reference in NAC 445A.4525.*

**Sec. 17.** *The following features for reliability or alternatives acceptable to the Division or the appropriate district board of health must be included in the design and construction of any facility to treat groundwater:*

*1. If required, alarm devices to indicate failures in the coagulation, filtration and disinfection processes. The alarm must notify the person designated by the public water system as responsible for taking corrective action or, if the facility is unmanned, have the capability to shut the plant down until corrective action can be taken.*

*2. If required, standby replacement equipment to ensure continuous operation and control of unit processes for coagulation, filtration and disinfection.*

*3. Unless it is otherwise justified by an engineer and approved by the Division or the appropriate district board of health, multiple filter units are required to provide redundant capacity if filters are out of service for backwash or maintenance.*

**Sec. 18.** *A public water system shall, not later than 6 months after receiving notification from the Division or the appropriate district board of health that it is operating a facility to treat groundwater, ensure that the persons who operate the facility to treat groundwater have been issued appropriate operating certificates as required by NAC 445A.626.*

**Sec. 19.** *A facility for disinfection of groundwater must be equipped with:*

- 1. A reserve supply of chemicals and backup available parts for the equipment; and*
- 2. An emergency plan to be put into effect if there is a failure in the disinfection process.*

*The object of the plan must be to prevent delivery to the distribution system of any water that has not been disinfected or that has been disinfected inadequately. The plan must be posted in the treatment plant or in any other place that is accessible to the operator of the plant.*

**Sec. 20.** *1. A public water system shall submit a plan of operations for each facility that treats groundwater to the Division or the appropriate district board of health for review and approval. The plan must be designed to produce the optimal quality of water from the treatment process. The supplier shall operate the facility in accordance with the approved plan.*

*2. The plan must include a description of:*

- (a) The program for monitoring the performance of the treatment facility;*
- (b) The program for maintaining unit process equipment;*
- (c) The persons who operate the facility, including the number of staff and the level of their training;*
- (d) The operation of each unit process;*
- (e) The procedures used in the laboratory, if applicable;*
- (f) The procedures used to determine chemical dose rates;*
- (g) Record keeping protocol;*
- (h) The procedure for responding to an emergency at the facility or within the watershed that could conceivably affect the treatment facility; and*
- (i) Any other features that contribute to the reliable operation of the facility.*

**Sec. 21. 1.** *Each public water system shall maintain accurate and complete records of the operation of each facility to treat groundwater. The records must include:*

- (a) The results of all monitoring conducted in accordance with NAC 445A.454 and 445A.456;*
- (b) The date of any maintenance or inspection of a filter and the results of the inspection;*
- (c) The quantity of water produced;*
- (d) The quality of water produced;*
- (e) The hours of operation;*
- (f) The rates of flow at the plant;*
- (g) The rates of filtration;*
- (h) The rates of backwash; and*
- (i) The dates and description of failures of major equipment or unit processes and the action taken to correct these failures.*

**2.** *The records of a facility to treat groundwater must be retained for a period of not less than 2 years, unless the Division or the appropriate district board of health has determined otherwise.*

**Sec. 22.** *A public water system operating a facility to treat or blend groundwater shall submit a sampling log every 3 months to the Division or the appropriate district board of health that verifies the facility is properly treating or blending the water in accordance with NAC 445A.450 to 445A.492, inclusive and sections 2 to 7, inclusive, of this regulation. The Division or the appropriate district board of health may reduce the frequency for submittal of the sampling log information after the facility provides sampling information verifying that the facility is providing treated or blended water that is consistent with the minimum*

*requirements of NAC 445A.450 to 445A.492, inclusive, and sections 2 to 7, inclusive, of this regulation.*

**Sec. 23.** NAC 445A.450 is hereby amended to read as follows:

445A.450 As used in NAC 445A.450 to ~~445A.492,~~ *445A.540*, inclusive, *and sections 2 to 22, inclusive, of this regulation*, unless the context otherwise requires:

1. ~~“Health authority” means the officers and agents of the Health Division or the officers and agents of the local boards of health.~~

~~—2. “Health Division” means the Health Division of the Department of Human Resources.]~~

*“Commission” has the meaning ascribed to it in section 3 of chapter 171, Statutes of Nevada 2005, at p. 551.*

2. *“District board of health” has the meaning ascribed to it in section 4 of chapter 171, Statutes of Nevada 2005, at p. 551.*

3. *“Division” has the meaning ascribed to it in section 5 of chapter 171, Statutes of Nevada 2005, at p. 551.*

4. *“Monitoring program” means a program developed by a public water system and approved by the Division or the appropriate district board of health to sample water quality from a sampling point for compliance purposes.*

5. “Primary standard” means a standard which specifies a maximum contaminant level for any constituent found in a public water supply which, if exceeded, may adversely affect the health of persons.

~~4. “Properly certified laboratory” means a laboratory, including a mobile laboratory, that is certified as acceptable by the Nevada laboratory certification officer pursuant to a certification~~

~~program approved by the Environmental Protection Agency and the regulations and procedures adopted by the State Board of Health.~~

~~5.]~~ 6 “Public water system” has the meaning ascribed to it in NRS 445A.840 and includes a water authority in a county whose population is 400,000 or more.

7. *“Sampling point” means a location where water samples are taken for compliance purposes in accordance with the requirements for the specific contaminant or water quality parameters being monitored.*

8. *“Sanitary survey” means an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purposes of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.*

9. *“Secondary maximum contaminant levels” means a maximum contaminant level adopted by the Commission for a constituent found in a public water supply that, if exceeded, may cause aesthetic concerns to a consumer.*

10. *“Supplier of water” has the meaning ascribed to it in NRS 445A.845.*

11. *“Treatment technique” means an enforceable water treatment process or procedure, required to be operated at a specified effectiveness for removal of a measurable surrogate contaminant, that public water systems must employ to ensure effective removal of other contaminants for which there is not a reliable, economical, technically feasible method to measure at levels of concern.*

~~[6.]~~ 12. “Water authority” has the meaning ascribed to it in NRS 377B.040.

~~[7.]~~ 13. The words and terms defined in 40 C.F.R. § 141.2 have the meanings ascribed to them in that section.

**Sec. 24.** NAC 445A.451 is hereby amended to read as follows:

445A.451 The provisions of NAC 445A.450 to 445A.492, inclusive, *and sections 2 to 7, inclusive, of this regulation* apply to all public water systems unless a public water system:

1. Consists only of distribution and storage facilities and does not have any *production, collection or treatment facilities*;
2. Obtains all of its water from, but is not owned or operated by, a public water system to which NAC 445A.450 to 445A.492, inclusive, *and sections 2 to 7* in interstate commerce.

**Sec. 25.** NAC 445A.4525 is hereby amended to read as follows:

445A.4525 The provisions of 40 C.F.R. §§ 141.1, 141.2, 141.4 ~~[, 141.5 141.11 to 141.16, inclusive, 141.21 to 141.30, inclusive, 141.31 to 141.35, inclusive, 141.40, 141.41, 141.42, 141.61 to 141.65, inclusive, 141.74, 141.80 to 141.91, inclusive, 141.100, 141.101, 141.110, 141.111, 141.130 to 141.135, inclusive, and 141.151 to 141.155, inclusive,]~~ *to 141.42, inclusive, subsections (a) and (d) of 141.43, 141.60 to 141.571, inclusive* of the “National Primary Drinking Water Regulations,” as those provisions existed on ~~[February 16, 1999,]~~ *July 1, 2003,* are hereby adopted by reference ~~[,]~~ *, unless the Commission gives notice that the requirements are not suitable for this State pursuant to NAC 445A.4915.* A copy of a publication containing those provisions is available from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954, or by telephone at (202) 512-1800, for the price of ~~[\$47.]~~ *\$61.* Copies of those regulations are also available, free of charge, ~~[from the Environmental Protection Agency]~~ at the Internet address ~~[<<http://www.epa.gov/safewater/mcl.html>>.]~~ *<[http://www.access.gpo.gov/nara/cfr/waisidx\\_02/40cfr141\\_02.html](http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr141_02.html)>.*

**Sec. 26.** NAC 445A.453 is hereby amended to read as follows:

445A.453 All public water systems must meet the requirements of NAC 445A.450 to ~~[445A.492,]~~ *445A.540*, inclusive, *and sections 2 to 22, inclusive, of this regulation* and of the “National Primary Drinking Water Regulations,” ~~[as set forth in 40 C.F.R. §§ 141.1, 141.4, 141.5, 141.11 to 141.16, inclusive, 141.61 to 141.65, inclusive, 141.80 to 141.91, inclusive, 141.100, 141.101, 141.110, 141.111, 141.130 and 141.135,]~~ as adopted by reference in NAC 445A.4525 . ~~[, unless the State Board of Health gives notice that the requirements are not suitable for this State pursuant to NAC 445A.4915.]~~

**Sec. 27.** NAC 445A.454 is hereby amended to read as follows:

445A.454 The monitoring requirements for the primary standards set forth in NAC 445A.453 must be performed as required by 40 C.F.R. §§ 141.21 to 141.30, inclusive, 141.40, 141.41, 141.42, *141.74, 141.86 to 141.89, inclusive,* 141.131, 141.132 ~~[and]~~, 141.133, *141.172 141.173, 141.174, 141.521, 141.530 to 141.536, inclusive, 141.541, 141.542, 141.543, 141.550 to 141.553, inclusive, and 141.560 to 141.564, inclusive,* as adopted by reference in NAC 445A.4525 . ~~[, unless the State Board of Health gives notice that the requirements are not suitable for this State pursuant to NAC 445A.4915. Each analysis of the primary standards must be performed in compliance with NAC 445A.458 and in]~~

*2. Any analysis conducted to determine compliance with the primary standards referenced in NAC 445A.453 must be performed by* a laboratory that is certified pursuant to the provisions of NAC 445A.542 to 445A.54296, inclusive ~~[,]~~, *in accordance with:*

*(a) The method or methods listed in, or approved pursuant to, the provisions of NAC 445A.542 to 445A.54296, inclusive, for the selected contaminant or contaminants in the drinking water; or*



*(b) Any method for the selected contaminant or contaminants in the drinking water approved by the United States Environmental Protection Agency as an acceptable alternative test procedure for drinking water.*

*3. For water systems which are conducting water quality monitoring at a frequency greater than annually, compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium must be determined during normal operating conditions by a running annual average at any sampling point. A monitoring program identifying the sampling points must be submitted to the Division or the appropriate district board of health for review and approval. The monitoring program must demonstrate that the average quality of the water served to each customer in the distribution system is below the maximum contaminant level. The Division or the appropriate district board of health shall establish the number of samples the public water system must take for calculating the running annual average. The public water systems may not monitor more frequently than specified in the monitoring program by the Division or the appropriate district board of health to determine compliance unless approved in writing by the Division or the appropriate district board of health.*

*4. As used in this section:*

*(a) "Normal operating conditions" means the conditions that are achieved when the water system operates wells or treatment plants to supply water for seasonal demands.*

*(b) "Running Annual Average" means the sum of the consecutive 12-month contaminant sample values divided by the total number of samples taken at one sample point. (Example:  $(\sum x_1 + x_2 + x_n)/n = \text{Running Annual Average}$ )*

**Sec. 28.** NAC 445A.455 is hereby amended to read as follows:

445A.455 ~~[1. Whenever any of the following chemical substances, as measured at representative points in the distribution system, is present in a public water supply in excess of the listed levels, and the health authority determines that there is another more suitable supply of water which is economically feasible, available in a sufficient quantity, and of a significantly higher quality, the supplier of water shall give notice to the public:~~

Substance	Level, Milligrams Per Liter
Chloride	250.0
Color	15.0 color units
Copper	1.0
Foaming Agents	0.5
Iron	0.3
Magnesium	125.0
Manganese	0.05
Odor	3.0 threshold odor number
pH	6.5-8.5
Sulfate	250.0
TDS (total dissolved solids dried at 180°C)	500.0
Zinc	5.0

~~2. The following chemical substances, as measured at representative points in the distribution system, must not be present in a public water supply in excess of the listed levels:~~

<del>Substance</del>	<del>Level, Milligrams Per Liter</del>
	<del>Chloride—400.0</del>
	<del>Iron—0.6</del>
	<del>Magnesium—150.0</del>
	<del>Manganese—0.1</del>
	<del>Sulfate—500.0</del>
	<del>TDS (total dissolved solids dried at 180°C)—1000.0</del>

~~3.1~~ *1. Secondary maximum contaminant levels, which apply to public water systems, are listed in the following table:*

<i>Constituent or Indicator</i>	<i>Secondary Maximum Contaminant Level (milligrams/Liter or mg/L)</i>
<i>Aluminum</i>	<i>0.2 mg/L</i>
<i>Chloride</i>	<i>400 mg/L</i>
<i>Copper</i>	<i>1.0 mg/L</i>
<i>Foaming Agents</i>	<i>0.5 mg/L</i>

<i>Iron</i>	<i>0.6 mg/L</i>
<i>Magnesium</i>	<i>150 mg/L</i>
<i>Manganese</i>	<i>0.1 mg/L</i>
<i>Silver</i>	<i>0.1 mg/L</i>
<i>Sulfate</i>	<i>500 mg/L</i>
<i>Total Dissolved Solids (TDS)</i>	<i>1,000 mg/L</i>
<i>Zinc</i>	<i>5.0 mg/L</i>
	<i>Other units or indicators</i>
<i>Color</i>	<i>15 color units</i>
<i>Odor</i>	<i>3.0 threshold odor number</i>
<i>pH</i>	<i>6.5 to 8.5</i>

2. Except as otherwise provided in NAC 445A.6682, the standard for fluoride in community and nontransient, noncommunity water systems is 2.0 milligrams per liter.

~~[4.— If a public water system exceeds one of the standards set by subsection 2 or 3 or the State Board of Health grants a variance from the requirement concerning that contaminant level, the supplier of water shall give notice to the public.~~

~~—5.— The notices required by subsections 1 and 4 must be:~~

~~—(a) Published in a newspaper of general circulation in the area served by the system not more than 30 days after the standard is exceeded;~~

~~—(b) Delivered personally or by mail to each person served by the system not more than 45 days after the standard is exceeded; and~~

~~—(c) Published and delivered annually thereafter as provided in this section if the standard continues to be exceeded.]~~

**Sec. 29.** NAC 445A.456 is hereby amended to read as follows:

445A.456 1. ~~[Analysis for all public water systems must be completed by June 24, 1979. Analysis must be repeated]~~ *The secondary maximum contaminant levels must be monitored annually for public water systems which have surface water sources or groundwater sources under the direct influence of surface water, and at least once during every 3-year ~~[intervals or at lesser intervals if required by the health authority.]~~ compliance period for systems with groundwater sources, unless otherwise required by the Division or the appropriate district board of health. Samples must be collected at sample points which are representative of each source after any treatment.*

2. If the result of an analysis made pursuant to subsection 1 indicates that ~~[the level of]~~ any *secondary maximum* contaminant *level* listed in NAC 445A.455 ~~[exceeds the maximum level,]~~ *is exceeded*, the supplier of water must report *that result* to the *Division or the appropriate district board of* health ~~[authority]~~ within 30 days and initiate ~~[3]~~ *three* additional analyses at the same sampling point within 90 days. When the average of four analyses made pursuant to this subsection exceeds the *secondary* maximum *contaminant* level, the supplier of water must notify the *Division or the appropriate district board of* health ~~[authority]~~ and give notice to the public ~~[. Notice to the public must be in such form and manner as prescribed by the health authority and must ensure that the public using the system is adequately informed.]~~ *pursuant to subsection 3 of NAC 445A.485.*

3. Monitoring after public notification must be at a frequency designated by the *Division or the appropriate district board of* health ~~[authority]~~ and must continue until the level has not been exceeded ~~[in two successive samples]~~ *during two successive quarterly periods* or until a monitoring schedule as a condition to a variance or enforcement action *to achieve compliance* becomes effective.

4. A supplier of water is not required to report results to the *Division or the appropriate district board of health* ~~[authority]~~ where a state laboratory performs the analysis and reports the results to the *Division or the appropriate district board of health* . ~~[authority.]~~ *Except as otherwise provided in this subsection, the public water system shall provide the results of any analysis performed pursuant to this section to the Division or to the appropriate district board of health by the 10th day of the month following receipt of the results.*

5. *The public water system shall, within 6 months of the notice required by subsection 2, develop a plan to return the water system to compliance. This plan must be submitted to, and be approved by, the Division or the appropriate district board of health and may include:*

*(a) Acquisition of another suitable supply of water which is economically feasible to obtain, available in sufficient quantity, and of significantly higher or acceptable quality;*

*(b) Consolidation with an adjacent public water system that provides water of sufficient quantity and quality;*

*(c) Treatment of the source water; or*

*(d) Any other action sufficient to return the water system to compliance.*

**Sec. 30.** NAC 445A.457 is hereby amended to read as follows:

445A.457 Any analysis conducted to determine compliance with NAC 445A.455 must be made in accordance with : ~~[one of the following methods:~~

~~—1.—Any]~~

*1. The method for the selected contaminant or contaminants in the drinking water listed in* ~~[40 C.F.R. Part 143. A copy of Part 143 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, at a cost of \$41.]~~

~~[2.— Any method listed in 40 C.F.R. Part 136. A copy of Part 136 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, for the price of \$41.~~

~~—3.] NAC 445A.542 to 445A.54296, inclusive; or~~

2. Any method *for the selected contaminant or contaminants in the drinking water* approved by the United States Environmental Protection Agency as an accepted alternative test procedure for drinking water.

**Sec. 31.** NAC 445A.458 is hereby amended to read as follows:

445A.458 1. Except as otherwise provided in this section, each analysis required by NAC 445A.4525 to 445A.457, inclusive, must be performed by a ~~[properly certified laboratory.]~~ *laboratory certified pursuant to NAC 445A.542 to 445A.54296, inclusive.*

2. Turbidity measurements may be made by a ~~[certified]~~ laboratory *certified pursuant to NAC 445A.542 to 445A.54296, inclusive,* or by *public* water ~~[supply]~~ *system* personnel utilizing an instrument capable of meeting the requirements of 40 C.F.R. § 141.22(a), as adopted by reference pursuant to NAC 445A.4525.

3. Chlorine residual measurements ~~[when authorized as a substitute for coliform bacteria monitoring may]~~ *must* be made by ~~[the water supplier]~~ *public water system personnel* utilizing an instrument and methods capable of meeting the requirements of 40 C.F.R. § ~~[141.74,]~~ *141.74(a)(2)*, as adopted by reference in NAC 445A.4525.

4. *Temperature and pH measurements must be made by the public water system utilizing an instrument and methods capable of meeting the requirements of 40 CFR § 141.23(k)(1), as adopted by reference in NAC 445A.4525.*

*5. Public water systems may direct the laboratory which analyzes water samples to submit the results of the sample to the Division or the appropriate district board of health.*

**Sec. 32.** NAC 445A.485 is hereby amended to read as follows:

445A.485 1. The owner or operator of a public water system ~~[who fails to perform monitoring as required by 40 C.F.R. § 141.21, as adopted by reference in NAC 445A.4525, shall notify all persons served by the system within 45 days after the violation or failure. All other activities of reporting, public notification and recordkeeping must be performed as required by 40 C.F.R. §§ 141.31 to 141.35, inclusive, 141.134 and 141.151 to 141.155, inclusive, as adopted by reference in NAC 445A.4525, and by NAC 445A.450 to 445A.492, inclusive.~~

~~2. Daily turbidity measurements must be compiled on a monthly basis and analyzed as required by 40 C.F.R. § 141.22, as adopted by reference in NAC 445A.4525. The compiled results must be sent to the Health Division before the 10th day of the following month. Water suppliers located in Clark County or Washoe County shall report to the applicable district health department.]~~ *must provide notice to the Division or the appropriate district board of health of the occurrence of any of the events listed in NAC 445A.538, in accordance with the provisions of that section.*

*2. Public notice of violations of primary drinking water regulations, and other circumstances with potential adverse health affects, is required pursuant to NRS 445A.940 and as follows:*

*(a) The owner or operator of a public water system must provide notice to persons served by the system for all violations of the primary standards, treatment techniques, monitoring requirements, testing procedures and other circumstances set forth in NAC 445A.450 to 445A.540, inclusive, and sections 2 to 22, inclusive, of this regulation, pursuant to the*



*requirements of this section and 40 C.F.R. §§ 141.201 to 141.210, inclusive, as adopted by reference in NAC 445A.4525, including, without limitation:*

- (1) Failing to comply with an applicable primary standard;*
- (2) Failing to comply with a prescribed treatment technique;*
- (3) Failing to perform water quality monitoring;*
- (4) Failing to comply with testing procedures as prescribed by a drinking water regulation;*
- (5) Operating under a variance or exemption;*
- (6) Failing to comply with the requirements of any schedule that has been set under a variance or exemption;*
- (7) The occurrence of a waterborne disease outbreak or other waterborne emergency;*
- (8) Exceeding the nitrate MCL by a noncommunity water system when granted permission by the primacy agency under 40 C.F.R. § 141.11(d);*
- (9) Exceeding the secondary maximum contaminant level for fluoride, set forth in subsection 2 of NAC 445A.455;*
- (10) Making available unregulated contaminant monitoring data; or*
- (11) Other violations as determined by the Division or the appropriate district board of health to require a public notice, not already listed in Appendix A to 40 C.F.R. §§ 141.201 to 141.210, inclusive, as adopted by reference in NAC 445A.4525.*

*(b) Public notices are divided into three tiers to take into account the seriousness of the violation or situation and any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in paragraph (a) of subsection 2 are determined by the tier to which the violation or situation is assigned. The federal public*

*notification regulations, 40 C.F.R. §§ 141.201 to 141.210, inclusive, including Appendices A, B and C, adopted by reference pursuant to NAC 445A.4525, provide the criteria for the tier assignment for each specific violation or situation, and the requirements for the content, form, manner and frequency of the notice.*

*(c) Each public water system must provide public notice to persons served by the water system in accordance with this section. Public water systems that sell or otherwise provide drinking water to other public water systems are required to give notice to the owners or operators of those systems, who are then responsible for providing public notice to the persons they serve. If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Division or the appropriate district board of health may allow the system to limit distribution of the public notice to only those persons served by that portion of the system which is out of compliance. Permission by the Division or the appropriate district board of health for limiting distribution of the notice must be granted in writing.*

*(d) A copy of the notice must also be sent to the Division or the appropriate district board of health in accordance with the requirements of 40 C.F.R. § 141.31(d), adopted by reference pursuant to NAC 445A.4525.*

*3. Public notice of a violation of NAC 445A.455 is required pursuant to NRS 445A.940 and as follows:*

*(a) When a secondary maximum contaminant level exceeds the levels or units specified in subsection 1 of NAC 445A.455, the public water system must, within 90 days, collect and analyze three additional samples from the same sample point, but not more than one sample per month. If the average contaminant level of the four samples exceeds the secondary*

*maximum contaminant level, the public water system must notify the Division or the appropriate district board of health and must provide notice to the public. The notice must be:*

*(1) For community public water systems:*

*(I) Published in a newspaper of general circulation in the area served by a system not more than 30 days after the standard is exceeded; or*

*(II) Delivered personally or by mail to each person served by the system not more than 30 days after the standard is exceeded; and*

*(III) Published and delivered annually thereafter as provided in the annual consumer confidence report prepared pursuant to section 4 of this regulation if the standard continues to be exceeded.*

*(2) For noncommunity water systems:*

*(I) Delivered personally or by mail to each person served by the system not more than 30 days after the standard is exceeded; or*

*(II) Posted, within 30 days after the standard is exceeded, in a prominent location for consumers of the water system to read; and*

*(III) Posted, or delivered annually thereafter if the standard continues to be exceeded.*

*(b) If the Commission grants a variance pursuant to NAC 445A.487, 445A.488 or section 5 of this regulation from the requirement concerning a secondary maximum contaminant level, the public water system shall give notice to the public pursuant to subparagraph (1) or (2) of paragraph (a) of subsection 3, as required by the type of system.*

*(c) In a fluoridated public water system, if the concentration for fluoride does not meet the concentrations specified in subsection 6 of NAC 445A.6682, the public water system must*

*report the incident to the Division or the appropriate district board of health as required in paragraph (j) of subsection 12 of NAC 445A.6682.*

*(d) Notice to the public must be in such form and manner as prescribed by the Division or the appropriate district board of health and must ensure that the public using the system is adequately informed.*

*4. The Commission may not grant a variance from the provisions of public notification required by this regulation.*

**Sec. 33.** NAC 445A.487 is hereby amended to read as follows:

445A.487 1. The ~~{State Board of Health}~~ **Commission** may grant a variance from a primary drinking water regulation to a public water system which cannot meet a requirement respecting a maximum contaminant level specified in such drinking water regulation because of characteristics of the raw water source or sources which are reasonably available to the system . ~~{despite application of}~~ *A variance may be issued to a system on the condition that the public water system install the best available technology, treatment techniques or other means which the {Board} Commission finds are reasonably available after taking costs into consideration {;} and based on an evaluation satisfactory to the Commission that indicates that alternative sources of water are not reasonably available to the public water system.* Before such a variance may be granted, the ~~{Board}~~ **Commission** must find that the variance will not result in an unreasonable risk to health.

2. The ~~{State Board of Health}~~ **Commission** may grant a variance to a public water system from any provision of a primary drinking water regulation which requires the use of a specified treatment technique with respect to a contaminant. Prior to the issuance of such a variance, the public water system must demonstrate to the satisfaction of the ~~{Board}~~ **Commission** that the

treatment technique is not necessary to protect the health of persons because of the nature of the raw water source of the system.

3. The ~~{State Board of Health}~~ *Commission* may grant a variance from a secondary drinking water regulation to a public water system in accordance with the procedures for seeking variances from the ~~{State Board of Health set forth in chapter 439 of NAC.}~~ *Commission*.

4. Public hearings and other procedures for consideration of requests for variances from NAC 445A.450 to 445A.492, inclusive, *and sections 2 to 7, inclusive, of this regulation* must be conducted in accordance with the procedures for seeking variances from the ~~{State Board of Health as set forth in chapter 439 of NAC.}~~ *Commission. The Commission will grant a variance from a regulation only if it finds from the evidence presented at the hearing that:*

*(a) There are circumstances or conditions which:*

*(1) Are unique to the applicant;*

*(2) Do not generally affect other persons subject to the regulation;*

*(3) Make compliance with the regulation unduly burdensome; and*

*(4) Cause a hardship to and abridge a substantial property right of the applicant; and*

*(b) Granting the variance:*

*(1) Is necessary to render substantial justice to the applicant and enable him to preserve and enjoy his property right; and*

*(2) Will not be detrimental or pose a danger to public health and safety.*

*↳ Whenever an applicant for a variance alleges that he suffers or will suffer economic hardship by complying with the regulation, he must submit evidence demonstrating the costs of his compliance with the regulation. The Commission will consider the evidence and determine whether those costs are unreasonable.*

**Sec. 34.** NAC 445A.488 is hereby amended to read as follows:

445A.488 1. The ~~[State Board of Health]~~ *Commission* will, when it grants a variance to a public water system ~~[ ]~~ *pursuant to NAC 445A.487, 445A.488 or Section 5 of this regulation,* prescribe:

(a) A schedule for compliance, including increments of progress, with the contaminant level requirement with respect to which the variance was granted.

(b) Such additional control measures as it may require for the contaminant during the period ending on the date compliance with the requirement is required.

2. *The Commission will require, when it grants a variance to a public water system pursuant to NAC 445A.487, 445A.488 or section 5 of this regulation, unless an exemption is granted to a public water system pursuant to NAC 445A.489 or 445A.490, compliance with the conditions of the variance not later than 3 years after the date on which the variance was granted, except that a public system may be granted up to 2 additional years to comply with a variance technology, to secure an additional source of water, restructure or consolidate if the Division or the appropriate district board of health determines that additional time is necessary for capital improvements or to allow for financial or technical assistance from any other federal or state program.*

3. No such schedule for compliance or effectuation may take effect until the ~~[state]~~ *Division* or *the appropriate* district board *of health* has approved, or approved with modifications, the schedule after notice and a public hearing held in the same manner as the variance hearing.

~~[3.]~~ 4. A schedule approved by the ~~[state or district board]~~ *Commission* must require compliance by the *public* water system with each contaminant level requirement for which the variance was granted, as expeditiously as the ~~[Board]~~ *Commission* determines to be practicable.

**Sec. 35.** NAC 445A.489 is hereby amended to read as follows:

445A.489 1. The ~~[State Board of Health]~~ *Commission* may grant an exemption from any requirement respecting a maximum contaminant level or treatment technique of an applicable primary drinking water regulation to:

(a) A public water system which was in operation on the effective date of the requirement if:

(1) Because of compelling factors, including economic considerations, *such as qualification of the public water system as serving a disadvantaged community*, the public water system is unable to comply ~~[; and]~~ *or to implement measures to develop an alternative source of supply;*

(2) The granting of the exemption will not result in an unreasonable risk to health; ~~[or]~~ *and*

*(3) Management or restructuring changes, or both, cannot reasonably be made that will result in compliance with the primary drinking water standards or, if compliance cannot be achieved, improve the quality of the drinking water; or*

(b) A public water system which was not in operation on the effective date of the requirement if:

(1) Because of compelling factors, including economic considerations, *such as qualification of the public water system as serving a disadvantaged community*, the public water system is unable to comply ~~[;]~~ *or to implement measures to develop an alternative source of supply;*

(2) There is no reasonable alternative source of drinking water available to the public water system; ~~[and]~~

(3) The granting of the exemption will not result in an unreasonable risk to health ~~[;]~~ *; and*

*(4) Management or restructuring changes, or both, cannot reasonably be made that will result in compliance with the primary drinking water standards or, if compliance cannot be achieved, improve the quality of the drinking water.*

2. Public hearings and other procedures for consideration of requests for exemptions from NAC 445A.450 to 445A.540, inclusive, *and sections 2 to 22, inclusive, of this regulation* must be conducted in accordance with the procedures for seeking variances from the ~~State Board of Health set forth in chapter 439 of NAC.~~ *Commission.*

3. *As used in this section, “disadvantaged community” means an area served by a public water system in which the average income per household is less than 80 percent of the median household income of the county.*

**Sec. 36.** NAC 445A.490 is hereby amended to read as follows:

445A.490 1. The ~~State Board of Health~~ *Commission* will, when it grants an exemption to a public water system, prescribe:

(a) A schedule for compliance, including increments of progress ~~and~~ *or measures to develop an alternative source of water supply*, with the contaminant level or treatment technique requirement with respect to which the exemption was granted.

(b) Such control measures as it may require for the contaminant during the period ending on the date compliance with the requirement is required.

2. No such schedule for compliance or effectuation may take effect until the ~~state~~ *Commission* or *the appropriate* district board *of health* has approved, or approved with modifications, the schedule after notice and a public hearing held in the same manner as the exemption hearing.



3. A schedule approved by the ~~[state]~~ *Commission* or *the appropriate* district board of *health* must require compliance by the *public* water system with each contaminant level requirement for which the exemption was granted as expeditiously as the *Commission or the appropriate district* board of *health* determines to be practicable except ~~[-~~

~~—(a) In the case of an exemption granted with respect to a contaminant level or treatment technique requirement prescribed by the “National Primary Drinking Water Regulations” adopted pursuant to § 300g-1(a) of the Federal Act, not later than June 19, 1987;~~

~~—(b) In the case of an exemption granted with respect to a contaminant level or treatment technique requirement prescribed by the “National Primary Drinking Water Regulations,” other than for a regulation adopted pursuant to § 300g-1(a) of the Federal Act, not later than 12 months after the date of the issuance of the exemption; or~~

~~—(c) As] as~~ otherwise provided by the Federal Act.

4. *An exemption may not be granted unless the public water system establishes that:*

*(a) The public water system cannot meet the standard without the capital improvements which cannot be completed prior to the date established by the Federal Act;*

*(b) In the case of a public water system which needs financial assistance for the necessary improvements, the public water system has entered into an agreement to obtain such financial assistance from any other state or federal program or any such assistance is reasonably likely to be available within the period of the exemption; or*

*(c) The public water system has entered into an enforceable agreement to become part of a regional public water system and the public water system is taking all practicable steps to meet the standard.*

5. *In the case of a public water system that does not serve a population of more than 3,300 and which needs financial assistance for the necessary improvements, an exemption granted under subsection 4 may be renewed for one or more additional 2-year periods, but not to exceed a total of 6 years, if the public water system establishes that it is taking all practicable steps to meet the requirements of subsection 4.*

6. *A public water system may not receive an exemption under this section if the system was granted a variance under NAC 445A.487, 445A.488 or section 5 of this regulation.*

**Sec. 37.** NAC 445A.491 is hereby amended to read as follows:

445A.491 1. Any supplier of water who feels himself aggrieved by the action of the *Division or the appropriate* district board of health in approving or approving with modifications any schedule for compliance or effectuation submitted pursuant to a variance or an exemption may appeal the action to the ~~[State Board of Health]~~ *Commission or the appropriate district board of health* by filing a written notice of appeal ~~[with the district health department]~~ within 30 days of the written decision on the schedule.

2. ~~[The district health department must forward to the Secretary of the State Board of Health the full record of the proceedings, including all exhibits, the original application and the written decision within 10 days of the filing of the notice of appeal.~~

~~—3.]~~ Users of the *public* water ~~[supply]~~ *system* who feel themselves aggrieved by the action of the *Division or the appropriate* district board of health may appeal in the same manner as the ~~[supplier of water.]~~ *public water system*. Such an appeal must be supported by a minimum of 10 percent of the users of the *public water* system for *public water* systems serving a population of less than 5,000 and by a minimum of 5 percent for ~~[larger systems].~~

~~4. The State Board of Health~~ *public water systems serving a population of 5,000 or greater.*

3. *The Commission or the appropriate district board of health* will consider all such appeals at regularly scheduled public hearings, ~~[no later than 60 days]~~ after receipt of the record on appeal.

~~[5.]~~ 4. Evidence presented to the ~~[State Board of Health]~~ *Commission* on appeal is limited to that introduced before the *Division or the appropriate* district board of health.

~~[6.]~~ 5. At the conclusion of the hearing, the matter stands submitted and the ~~[State Board of Health]~~ *Commission or the appropriate district board of health* will enter a written decision, including findings of fact, within 14 days of the hearing date.

**Sec. 38.** NAC 445A.4915 is hereby amended to read as follows:

445A.4915 If any publication adopted by reference pursuant to NAC 445A.450 to ~~[445A.492,]~~ *445A.540*, inclusive, *and sections 2 to 22, inclusive, of this regulation* is revised, the ~~[State Board of Health]~~ *Commission* will review the revision to determine its suitability for this State. If the ~~[Board]~~ *Commission* determines that the revision is not suitable for this State, it will hold a public hearing to review its determination and give notice of that hearing within 6 months after the date of the publication of the revision. If, after the hearing, the ~~[Board]~~ *Commission* does not revise its determination, the ~~[Board]~~ *Commission* will give notice that the revision is not suitable for this State within 30 days after the hearing. If the ~~[Board]~~ *Commission* does not give such notice, the revision becomes part of the publication adopted by reference pursuant to NAC 445A.450 to ~~[445A.492, inclusive.]~~ *445A.540, inclusive, and sections 2 to 22, inclusive, of this regulation.*

**Sec. 39.** NAC 445A.492 is hereby amended to read as follows:

445A.492 If any of the provisions of NAC 445A.450 to ~~445A.492,~~ 445A.540, inclusive, *and sections 2 to 22, inclusive, of this regulation*, or any application thereof to any person, thing or circumstance is held invalid, it is intended that such invalidity not affect the remaining provisions, or their application, that can be given effect without the invalid provision or application.

**Sec. 40.** NAC 445A.495 is hereby amended to read as follows:

445A.495 As used in NAC 445A.495 to 445A.540, inclusive, *and sections 8 to 22, inclusive, of this regulation*, unless the context otherwise requires:

1. The words and terms defined in NAC 445A.497 to 445A.516, inclusive, have the meanings ascribed to them in those sections; and
2. The words and terms defined in 40 C.F.R. § 141.2, as adopted by reference pursuant to ~~NAC 445A.5175,~~ *NAC 445A.4525*, have the meanings ascribed to them in that section.

**Sec. 41.** NAC 445A.510 is hereby amended to read as follows:

445A.510 “Outbreak of ~~water borne~~ *waterborne* disease” means the significant occurrence of acute infectious illness, associated epidemiologically with the ingestion of water from a public water system that has been determined by the ~~Health~~ Division *or the appropriate district board of health* to be deficient in treatment.

**Sec. 42.** NAC 445A.517 is hereby amended to read as follows:

445A.517 The provisions of NAC 445A.495 to 445A.540, inclusive, *and sections 8 to 22, inclusive, of this regulation* apply to:

1. Any public water system using surface water or ~~ground water~~ *groundwater* under the direct influence of surface water; and
2. Any supplier of water who owns, controls or operates such a *public water* system.

**Sec. 43.** NAC 445A.518 is hereby amended to read as follows:

445A.518 1. A supplier of water who is notified by the ~~[Health]~~ Division *or the appropriate district board of health* that the public water system is not meeting any of the requirements for treatment set forth in *the federal regulations adopted pursuant to* NAC ~~[445A.5175,]~~ *445A.4525*, 445A.520, 445A.521 or 445A.526 to 445A.540, inclusive, shall submit a detailed plan to the ~~[Health Division,]~~ *Division or the appropriate district board of health*, not less than 120 days after the date of notification, containing a feasible timetable for bringing the system into compliance with these sections.

2. The date for final compliance must not be later than June 29, 1993, or 18 months after notification by the ~~[Health]~~ Division *or the appropriate district board of health* that ~~[ground water]~~ *groundwater* is under the direct influence of surface water, whichever is later, unless an extension is granted by the ~~[Health Division-]~~ *Division or the appropriate district board of health*.

**Sec. 44.** NAC 445A.520 is hereby amended to read as follows:

445A.520 1. Except as otherwise provided in this section, each supplier of water shall treat the water in accordance with NAC 445A.521 and 445A.526, and 40 C.F.R. §§ 141.70 ~~[and]~~ , *141.76*, 141.170, *and 141.500 to 141.503, inclusive*, as adopted by reference in NAC ~~[445A.5175,]~~ *445A.4525*.

2. A supplier of water who meets the standards of performance set forth in this section and NAC 445A.521 and 445A.526 and meets the operating criteria set forth in NAC 445A.533 will be considered to be in compliance with the requirements of subsection 1.

3. The ~~[Health]~~ Division *or the appropriate district board of health* may require a higher degree of treatment than required by subsection 1, depending on the degree of contamination within the source water.

4. The ~~[State Board of Health]~~ *Commission* will not grant a variance from the provisions of this section.

**Sec. 45.** NAC 445A.521 is hereby amended to read as follows:

445A.521 1. Each supplier of water shall treat the water in accordance with 40 C.F.R. §§ 141.73 , ~~[and]~~ 141.173, *and 141.550 to 141.553, inclusive*, as adopted by reference in NAC ~~[445A.5175.]~~ *445A.4525*.

2. The ~~[State Board of Health]~~ *Commission* will not grant a variance from the provisions of this section.

**Sec. 46.** NAC 445A.522 is hereby amended to read as follows:

445A.522 1. For the purposes of meeting the levels of treatment set forth in NAC 445A.520:

(a) Conventional filtration treatment is presumed to be capable of achieving at least 99.7 percent or ~~[2.5-log]~~ *2.5-log* removal of Giardia cysts and 99 percent or 2-log removal of viruses if the process is in compliance with the operating criteria set forth in NAC 445A.533 and the standards of performance set forth in NAC 445A.521; and

(b) Treatment by direct filtration, diatomaceous earth filtration and slow sand filtration is presumed capable of achieving at least a 99 percent or 2-log removal of Giardia cysts and a 90 percent or 1-log removal of viruses if the process is in compliance with the criteria and standards set forth in paragraph (a).

2. The ~~Health~~ Division *or the appropriate district board of health* may grant higher efficiencies for removal than those specified in this section if the supplier of water demonstrates to the Division that the higher efficiency for removal can be obtained reliably.

**Sec. 47.** NAC 445A.524 is hereby amended to read as follows:

445A.524 1. The use of an alternative filtration technology, including packaged treatment plants, may be approved by the ~~Health~~ Division *or the appropriate district board of health* if the following requirements are met:

(a) The supplier of water demonstrates that the technology proposed provides a minimum of 99 percent or 2-log removal of Giardia cysts and a ~~90 percent or 1-log removal of viruses.~~ *99 percent or 2-log removal of Cryptosporidium oocysts.* The process must meet the standards of performance established in NAC 445A.521.

(b) An engineering report is submitted to the ~~Health~~ Division *or the appropriate district board of health* documenting the results of experiments done at pilot plants or tests completed on a full-scale installation that is treating water with similar characteristics and exposed to similar hazards as the water proposed for treatment.

2. If the use of an alternative filtration technology is approved by the ~~Health Division,~~ *Division or the appropriate district board of health,* the supplier of water shall submit an engineering report, not less than 6 months after the system becomes operational, verifying that the alternative technology meets the standards established for performance under actual conditions of operation.

3. If the supplier of water does not meet these standards, he shall submit to the ~~Health~~ Division *or the appropriate district board of health* a timetable for the correction of the deficiencies.

**Sec. 48.** NAC 445A.525 is hereby amended to read as follows:

445A.525 1. A supplier of water may apply to the ~~Health~~ Division to operate without installing a system for filtration. The ~~Health~~ Division *or the appropriate district board of health* may grant this request if the supplier of water, not later than December 30, 1991, or 18 months after notification by the ~~Health~~ Division *or the appropriate district board of health* that a ~~ground-water~~ *groundwater* system is under the direct influence of surface water, whichever is later, meets the requirements set forth in 40 C.F.R. §§ 141.71 , ~~and~~ 141.171, *141.520, 141.521 and 141.522*, as adopted by reference in NAC ~~445A.5175, except that, for~~ *445A.4525*. For systems located at Lake Tahoe, the supplier of water must demonstrate that a level of protection ~~[, which is equivalent to watershed control,]~~ *which minimizes the potential for contamination by Giardia lamblia cysts, viruses and Cryptosporidium oocysts* is provided by the location of the intake structure ~~[.]~~ *and a watershed control program. The watershed control program must include the periodic performance of a watershed survey as required by NAC 445A.539, and the water system must be subject to annual on-site inspections to assess the watershed control program.*

2. To avoid the requirements for filtration, a supplier of water must comply with the provisions that are set forth in 40 C.F.R. §§ 141.74(b) and 141.75(a), as adopted by reference in NAC ~~445A.5175.]~~ *445A.4525*. Additional information on obtaining approval to operate without filtration is outlined in the *Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources*, 1991 edition (#PB93-222933INZ). This document is available at a cost of ~~[\$101]~~ *\$117* from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

**Sec. 49.** NAC 445A.526 is hereby amended to read as follows:



445A.526 1. Each supplier of water shall provide disinfection treatment in accordance with 40 C.F.R. §§ 141.72 , ~~and~~ 141.172, *and 141.530 to 141.544, inclusive*, as adopted by reference in NAC ~~[445A.5175.]~~ *445A.4525*.

2. The ~~[State Board of Health]~~ *Commission* will not grant a variance or an exemption from the provisions of this section.

**Sec. 50.** NAC 445A.527 is hereby amended to read as follows:

445A.527 1. Except as otherwise provided in this section, each supplier of water shall, on or after June 29, 1993, or on the date the system for filtration is installed, whichever is later, meet the requirements set forth in 40 C.F.R. §§ 141.74 , ~~and~~ 141.174, *and 141.560 to 141.564, inclusive*, as adopted by reference in NAC ~~[445A.5175.]~~ *445A.4525*.

2. A supplier of water shall measure and record the parameters that are needed to determine compliance with the requirements for concentration times time, including, but not limited to:

- (a) The temperature of the disinfected water;
- (b) The pH of the disinfected water, if chlorine is used as a disinfectant;
- (c) The disinfectant contact time; and
- (d) The concentration of the residual disinfectant before or at the point the water reaches the first customer.

3. A supplier of water shall measure the concentration of residual disinfectant or heterotrophic plate count within the distribution system at the same frequency and at the same time and location as total coliforms are measured. A supplier of water that uses both a source of surface water or ~~[ground water]~~ *groundwater* under the direct influence of surface water, and a source of ~~[ground water]~~ *groundwater* that is not under the direct influence of surface water, may petition the ~~[Health]~~ Division *or the appropriate district board of health* for alternate

sampling locations if he demonstrates that these sampling points are more representative of the disinfected surface water or ~~[ground-water]~~ *groundwater* under the direct influence of surface water in the distribution system.

**Sec. 51.** NAC 445A.529 is hereby amended to read as follows:

445A.529 A supplier of water that has installed a system for treatment before November 29, 1990, which does not consist of technologies pursuant to which the supplier of water shall treat water in compliance with NAC 445A.521 or which was not designed to comply with the operating criteria in NAC 445A.531 and 445A.533, shall submit to the ~~[Health]~~ Division *or the appropriate district board of health* an engineering report which demonstrates that the plant can be operated to supply water meeting the requirements for performance contained in NAC 445A.521 and 445A.526. This report must include an analysis of the previous 12 months of operating data and any special studies conducted to test the performance of the plant under conditions of adverse water quality.

**Sec. 52.** NAC 445A.530 is hereby amended to read as follows:

445A.530 1. A supplier of water proposing to:

- (a) Construct a new facility for filtration and disinfection; or
- (b) Make additions to or modify significantly an existing facility for treatment,

↪ must submit an engineering report to the ~~[Health-Division.]~~ *Division or the appropriate district board of health*. The report must be approved by the Division *or the appropriate district board of health* before the supplier begins construction. The report must also describe how the facility will be designed to ensure that it complies with this section and NAC 445A.531.

2. A new facility for filtration and disinfection must:

- (a) Be designed to attain an average daily effluent turbidity goal of 0.2 units of nephelometric turbidity when using conventional, direct, and diatomaceous earth filtration plants.
- (b) Be free of structural and sanitary hazards.
- (c) Provide for protection against contamination by backflow.
- (d) Provide equipment for measuring and recording flow.
- (e) Be designed to mitigate the effects of events such as earthquakes, fires, floods, freezing and sabotage that are reasonably foreseeable.
- (f) Provide reasonable access for inspection, maintenance ~~and~~ and monitoring of all unit processes.
- (g) Provide for a coagulation process that includes rapid chemical mixing and is based on pilot plant or laboratory scale or equivalent results that demonstrate effectiveness of the coagulant chemicals over the full range of water quality conditions expected.
- (h) Provide for filter-to-waste for each filter unit or addition of coagulant chemicals or organic polymers to the water used for backwashing.
- (i) Provide backwash rates and facilities for surface or subsurface wash using air, water or a combination of these to clean the filter.
- (j) Provide treatment for the removal of solids from filter backwash water if the water is recycled into the treatment process. Recycled backwash water must be returned to the headworks of the treatment plant.
- (k) Make provision for facilities for pretreatment in the design of direct filtration, slow sand filtration ~~and~~ or diatomaceous earth filtration plants.
- (l) Provide equipment for disinfection that is of proper size for the full range of expected conditions of flow and capable of feeding accurately at all rates of flow.

(m) Provide for operation of the treatment plant without frequent shutdowns and start-ups.

3. As used in this section, “filter-to-waste” means a provision in the filtration process to allow the water that was filtered first to be wasted or reclaimed.

**Sec. 53.** NAC 445A.531 is hereby amended to read as follows:

445A.531 The following features for reliability or alternatives acceptable to the ~~Health~~ Division *or the appropriate district board of health* must be included in the design and construction of any plant that treats surface water or ~~ground-water~~ *groundwater* under the direct influence of surface water:

1. Alarm devices to indicate failures in the coagulation, filtration ~~and~~ and disinfection processes. The alarm must notify the person designated by the public water system as responsible for taking corrective action ~~or,~~ *and*, if the facility is unmanned, have the capability to shut the plant down until corrective action can be taken.


2. Standby replacement equipment to ensure continuous operation and control of unit processes for coagulation, filtration and disinfection.

3. Multiple filter units to provide redundant capacity if filters are out of service for backwash or maintenance.

**Sec. 54.** NAC 445A.533 is hereby amended to read as follows:

445A.533 A facility for filtration must be operated in accordance with the following requirements:

1. A plant for conventional and direct filtration must be operated at a rate of flow not to exceed 3 gallons per minute per square foot for single media filters and 6 gallons per minute per square foot for deep bed, dual or mixed media filters under conditions of gravity flow. For pressure filters, the rates of filtration must not exceed 2 gallons per minute per square foot for

single media filters and 3 gallons per minute per square foot for dual, mixed media  or deep bed filters.

2. A slow sand filter must be operated at a rate of filtration not to exceed 0.1 gallons per minute per square foot. The filter bed must not be dewatered except for cleaning and maintenance.

3. A diatomaceous earth filter must be operated at a rate not to exceed 1 gallon per minute per square foot.

4. During normal operating conditions, any filter removed from service must be backwashed upon start-up.

5. Rates of filtration must be increased gradually when placing filters back into service after backwashing or any other interruption in the operation of the filter.

6. In a plant using conventional and direct filtration, the turbidity of filtered water from any individual filter after backwashing or any other interruption must be less than 0.5 units of nephelometric turbidity after 4 hours of the initial operation of the filter, and the individual turbidity of the filter effluent must be less than or equal to 1 unit of nephelometric turbidity in at least 90 percent of interruption events during any consecutive 12-month period. The level of turbidity must never exceed 2 units of nephelometric turbidity before placing the filter back into operation. Compliance with this requirement will be determined by using data from the previous 12 months.

7. A pressure filter must be inspected physically and evaluated annually for occurrences such as media condition, formation of balls of mud and short circuiting. A written record of the inspection must be maintained at the treatment plant.

8. Coagulation and flocculation unit processes must be in use at all times when a plant using conventional and direct filtration is in operation. The effectiveness and optimization of these processes must be demonstrated by jar testing, pilot filter column testing or other means acceptable to the ~~[Health Division.]~~ *Division or the appropriate district board of health.*

9. The level of turbidity of filtered water from each filter unit must be monitored with a continuous turbidity meter and recorder, or with a sampling program approved by the ~~[Health]~~ Division. If this monitoring indicates that any filter unit is not performing as required by subsection 6, the filter must be taken out of service and inspected to determine the cause of its inadequate performance. The filter unit must not be returned to service until its deficiencies have been corrected and tests have been made to ensure that the filter unit meets these requirements.

10. To obtain approval for rates higher than those specified in subsections 1, 2 and 3 of this section, a supplier of water must demonstrate to the ~~[Health]~~ Division that his filters can ensure the same water quality at the increased rates of flow.

**Sec. 55.** NAC 445A.535 is hereby amended to read as follows:

445A.535 1. A supplier of water shall submit a plan of operations for each facility that treats surface water or ~~[ground-water]~~ *groundwater* under the direct influence of surface water to the ~~[Health]~~ Division *or the appropriate district board of health* for review and approval. The plan must be designed to produce the optimal quality of water from the treatment process. The supplier shall operate the facility in accordance with the approved plan.

2. The plan must include a description of:

- (a) The program for monitoring the performance of the treatment plant;
- (b) The program for maintaining unit process equipment;

(c) The persons who operate the facility, including the number of the staff and the level of their training;

(d) The operation of each unit process;

(e) The procedures used in the laboratory, if applicable;

(f) The procedures used to determine chemical dose rates;

(g) The records of the facility;

(h) The procedure for responding to an emergency at the plant or involving the watershed;

and

(i) Any other features that contribute to the reliable operation of the plant.

**Sec. 56.** NAC 445A.536 is hereby amended to read as follows:

445A.536 1. Each supplier of water must maintain accurate and complete records of the operation of each treatment plant using surface water or ~~[ground-water]~~ *groundwater* under the direct influence of surface water. The records must include:

(a) The results of all monitoring conducted in accordance with NAC 445A.527;

(b) The date of any maintenance or inspection of a filter and the results of the inspection, including any evaluation of a pressure filter required by subsection 7 of NAC 445A.533;

(c) The quantity of water produced;

(d) The hours of operation;

(e) The rates of flow at the plant;

(f) The rates of filtration;

(g) The rates of backwash; and

(h) The dates and description of failures of major equipment or unit processes and the action taken to correct these failures.

2. The records of a treatment plant must be retained for not less than 2 years, unless the ~~Health~~ Division *or the appropriate district board of health* has determined otherwise.

**Sec. 57.** NAC 445A.537 is hereby amended to read as follows:

445A.537 1. Each supplier of water shall submit to the ~~Health Division,~~ *Division or the appropriate district board of health*, on or after June 29, 1993, or on the date the system for filtration is installed, whichever is later, a monthly report on the operation of each facility not later than the 10th day of the following month.

2. The monthly report must include:

(a) A written explanation of the cause of any violation of the standards of performance set forth in NAC 445A.521 and 445A.526 and the operating criteria set forth in NAC 445A.533; and

(b) The information required by 40 C.F.R. §§ 141.75 , ~~and~~ 141.175, *141.570 and 141.571*, as adopted by reference in NAC ~~445A.5175.~~ *445A.4525.*

**Sec. 58.** NAC 445A.538 is hereby amended to read as follows:

445A.538 Beginning on or after June 29, 1993, or on the date the system for filtration is installed, whichever is later, each supplier of water shall notify the ~~Health~~ Division *or the appropriate district board of health* by telephone as soon as possible, but not later than the end of the next business day, whenever:

1. The turbidity of the filter effluent exceeds :

(a) *For conventional, direct filtration and absorption clarifier filtration systems, 1 unit* ~~5 units~~ of nephelometric turbidity.

(b) *For diatomaceous earth and slow sand filtration and systems which have filtration avoidance status, 5 units of nephelometric turbidity.*

(c) *For alternative technologies, the turbidity level specified upon approval.*



2. More than two consecutive samples of the turbidity of the combined filter effluent taken every 4 hours exceed 1 unit of nephelometric turbidity.

3. There is a failure to maintain at least 0.2 milligrams per liter of residual disinfectant in the water being delivered to the distribution system, regardless of whether the residual level of disinfectant was restored to at least 0.2 milligrams per liter within 4 hours.

4. An event occurs which may affect the ability of the treatment plant to produce safe, potable water , including, but not limited to, spills of hazardous materials in the watershed and failures of the unit treatment process.

5. An outbreak of ~~[water borne]~~ *waterborne* disease that is potentially attributable to the water system occurs.

*6. There is a failure to meet the minimum concentration times time for any given day.*

**Sec. 59.** NAC 445A.486, 445A.507 and 445A.5175 are hereby repealed.

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## TEXT OF REPEALED SECTIONS

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**445A.486 Obtaining results of analyses of water supplies.** A copy of the results of the analysis of water supplies throughout Nevada may be obtained from the Department of Human Resources, Health Division, Office of the State Health Officer, 505 E. King Street, Carson City, Nevada 89710.

**445A.507 “Health Division” defined.** “Health Division” means the Health Division of the Department of Human Resources.

**445A.5175 Adoption by reference of certain provisions of “National Primary Drinking Water Regulations.”** The provisions of 40 C.F.R. §§ 141.2, 141.70 to 141.75, inclusive, and 141.170 to 141.175, inclusive, of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999, are hereby adopted by reference. A copy of a publication containing those provisions is available from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954, or by telephone at (202) 512-1800, for the price of \$47. Copies of those regulations are also available, free of charge, from the Environmental Protection Agency at the Internet address <<http://www.epa.gov/safewater/mcl.html>>.